K Wiemelt

COPY

RESPONSES TO COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT COMMENTS ON THE CDPHE CONSERVATIVE SCREEN LETTER REPORT FOR OU 3

These detailed responses are provided for the purpose of addressing formal comments from the Colorado Department of Public Health and Environment (CDPHE) regarding the CDPHE Conservative Screen Letter Report for Operable Unit No 3 (OU 3), Rocky Flats Environmental Technology Site (the Site), dated September 23, 1994 CDPHE's comments are presented in **BOLD** and are preceded by "Comment " U S Department of Energy (DOE) responses to comments are preceded by "Response "

Comment 1: Table 2-1: This table and the accompanying text indicate that, in IHSSs 199 (soil) , 201 (Standley Lake), and 202 (Mower Reservoir), subsurface soil and subsurface sediment samples were not included in the conservative screen. This is not acceptable, nor is it consistent with what DOE committed to in agreeing to perform the conservative screen. Each source area must be evaluated for each media and each contaminant. DOE agreed in their response to CDPHE comments on the programmatic PRGs that subsurface soil would be included with surface soil for the purposes of calculating the ratio sum within the screen. This would include subsurface sediment. Therefore, these three data sets must be included in performing the screen.

It makes no sense to exclude certain data sets when determining PCOCs. The existence of potential contamination is not dependent on the presence or absence of exposure pathways. Contamination is either there or not there. When contamination is present, what DOE does about the contamination may indeed be dependent on exposure pathways.

Response Initially, all chemical and radionuclide data collected under the OU 3 field sampling program, as well as supplemental radionuclide data (e g , Jefferson County soils and Great Western Reservoir and Standley Lake sediments) were considered for inclusion in the CDPHE Conservative Screen

The use of subsurface data (soil and sediments) in the Human Health Risk Assessment (HHRA) process was discussed at the February 14, 1994 meeting involving CDPHE, EPA, and DOE (see attached meeting minutes) At that meeting the decision was made that if subsurface core (sediment) data are not associated with an exposure pathway, the data do not need to be compared to background data for risk assessment purposes Therefore, since it is unlikely that receptors will be exposed to subsurface sediments in Standley Lake or Mower Reservoir because there are no plans to drain these areas, subsurface sediment data for these two reservoirs were not used in the CDPHE Conservative Screen for OU 3 The subsurface sediment data for Great Western Reservoir were included in the CDPHE Conservative Screen because of the possibility (though unlikely) that Great Western Reservoir may be drained and could be converted to residential, recreational, or commercial/industrial land

ADMIN RECORD

A-OU03-000570

1/26

It was also noted at the February 14, 1994 meeting that the reasoning regarding use of subsurface sediment also applies to soil trench data Additionally, it was noted for soil data that most contamination is at the surface, and the trench information will be used for discussions of nature and extent of contamination in the RI, not for characterizing risk in the HHRA

Table 1 summarizes trench soil data, surface soil data from OU 3 and the Jefferson County Remedy Acres, and Rock Creek background surface soil data As seen in Table 1, the maximum values for ^{241}Am and $^{239/240}$Pu are in surface soil data In addition, none of the values for these two analytes in the trench data set exceed preliminary remediation goals (PRGs) (PRGs = 2 37 pCi/g for ^{241}Am and 3 43 pCi/g for $^{239/240}$Pu) Therefore, including trench soil data would not change the results of the CDPHE Conservative Screen for these two analytes (i e , no additional source areas for soil would be identified if trench data were included)

For the uranium isotopes, Table 1 shows that mean values in trench samples are less than or equal to mean values for OU 3 surface soil samples and Rock Creek surface soil samples The maximum value for $^{233/234}$U in trench samples (2 02 pCi/g) is less than the maximum value for surface soil samples (2 14 pCi/g) The maximum value for ^{238}U in trench samples (2 15 pCi/g) is approximately the same as the maximum value for OU 3 surface soil samples (2 13 pCi/g), and slightly exceeds the UTL for Rock Creek surface soil samples (2 00 pCi/g)

Figures 1 through 3 show radionuclide activities with depth in three of the soil trenches Activities for ^{241}Am and $^{239/240}$Pu are greatest at the surface, with activities decreasing with depth to approximately 0 00 pCi/g at a depth of about 10 centimeters indicating that the presence of these analytes in OU 3 soil is the result of windblown deposition Activities of the uranium isotopes show a different pattern, with levels of $^{233/234}$U, ^{235}U, and ^{238}U varying over the entire depth of the trench samples at one location The distribution of activities with depth for the uranium isotopes appears to indicate variability associated with background conditions, rather than wind-blown contamination from the Site as seen on the profiles for ^{241}Am and $^{239/240}$Pu Therefore, based on spatial analysis and comparison to background values, the uranium isotopes would not be included as potential chemicals of concern (PCOCs) even if trench subsurface soil data were used in the CDPHE Conservative Screen

Comment 2: Section 2.2.2: The only media to which CDPHE previously agreed to apply the weight-of-evidence background comparison was reservoir sediments. Surface water and ground water have extensive background data sets which are, we believe, comparable to the OU 3 data. Therefore, DOE inappropriately included surface and ground water in the weight-of-evidence analysis. This must be corrected.

Response Table 2 summarizes the reasons why the weight-of-evidence (WOE) approach was used for reservoir sediment, stream sediment, reservoir surface water, stream surface water, and groundwater data sets in lieu of rigorous statistical tests

There are at least four samples for most media by IHSS (Table 2) and it is possible, mathematically, to perform the Gilbert statistical tests for comparison to background with so few samples and the lack of comparable data sets However, the uncertainty introduced in the outcome of the statistical tests is likely greater than the approach used in the WOE evaluation The WOE approach tries to use a variety of information rather than binary hypothesis tests (i e , OU 3 concentrations greater than background or OU 3 concentrations less than background) that may or may not accurately reflect conditions at OU 3 Statistical analysis on data with so few data points would require additional confirmation That confirmation was performed using the WOE evaluation

The issue of whether the background and OU 3 stream surface water, stream sediment, and groundwater data are comparable is not wholly a statistical argument This issue was discussed in the March 10, 1994 and May 3, 1994 meetings with CDPHE and EPA If the data sets are not comparable from a physical sense (i e , environmental conditions and flow regimes), a statistically significant difference between site and background will be inconclusive because the test is evaluating the effect of more than one variable The variable to be tested is the influence of Rocky Flats Plant operations One will not be able to determine if a difference is due to anthropogenic influences from Rocky Flats Plant operations, or due to differing physical conditions if incomparable data sets are used for comparisons

The use of a point-by-point comparison of the OU 3 groundwater data to the upper tolerance limit (UTL) was approved by CDPHE and EPA in the February 14, 1994 meeting If the point-by-point comparison is made, no arsenic and beryllium samples exceed the UTL and would, therefore, not qualify as PCOCs Also, the groundwater data were not collected to characterize the aquifers within OU 3 Primarily, the groundwater monitoring wells were installed to confirm plutonium was not migrating from sediments or surface water to groundwater Groundwater sample analyses results from the two monitoring wells located downgradient of Standley Lake and Great Western Reservoir exhibit differences in groundwater chemistry between the two well locations Additionally, the results show differences from the wells contained in the Background Geochemical Characterization Report (BGCR) (DOE, 1993) These differences are likely due to variations in water chemistry exhibited by different aquifers Since the OU 3 monitoring wells are located in different hydrogeologic conditions than the BGCR wells, the data are not directly comparable These results are illustrated on the Piper diagrams presented in the agency-approved Technical Memorandum No 4 (TM 4) (DOE, 1994) and were discussed in the May 3, 1994 meeting between CDPHE, EPA, and DOE

Comment 3: Table 2-2: In light of the previous two specific comments and other problems, this table presents incorrect results for certain media:

Surface soil: The subsurface soil data set must be evaluated for additional PCOCs before the screen can be adequately performed.

Surface and subsurface sediments: Per DOE's response to CDPHE comments on the PPRGs, surface and subsurface sediments should be considered

together with the maximum from either data set being evaluated in the conservative screen. This was not done. In addition, the subsurface sediment data was inappropriately not considered in IHSSs 201 and 202.

Surface and Ground Water: These media were incorrectly evaluated using the weight-of-evidence approach rather than the background comparison methodology previously agreed to by all parties.

Radionuclides: How can plutonium be retained as a PCOC, but not americium?

Response Comments on surface soil, surface sediments, and subsurface sediments are addressed in Response #1 Comments on surface water and groundwater are addressed in Response #2

^{241}Am was not retained as a PCOC in sediments based on results of the weight-of-evidence evaluation Mean and maximum activities of ^{241}Am in OU 3 sediments were less than mean and maximum activities in background stream sediment data (see Table B-1 of the CDPHE Conservative Screen, September 23, 1994), additionally no spatial trends were observed throughout the reservoirs that indicated contamination from the Site Therefore, in order to be consistent in the interpretation of weight-of- evidence evaluations for all analytes, ^{241}Am was eliminated as a PCOC

Comment 4: Standley Lake and Mower Reservoir should have been considered sources in view of the previous comments.

Response All analytes in all media were eliminated as PCOCs for Standley Lake and Mower Reservoir based on the weight-of-evidence evaluations (As stated in Response #1, subsurface sediments for Standley Lake and Mower Reservoir were not used in the CDPHE Conservative Screen based on discussions with EPA and CDPHE at a meeting on February 14, 1994) Since no PCOCs were identified, these two reservoirs are not considered source areas

Comment - Attachment 1: This attachment summarizes the list of PCOCs for each source area, as identified by CDPHE. (A copy of the attachment is provided at the end of this document.) Attachment 1 includes the following PCOCs not listed in the CDPHE Conservative Screen Letter Report for OU 3: ^{241}Am, ^{235}U, As, and Be for sediments and $^{233/234}$U, As, Be, Cr, and Mn for groundwater in IHSS 200 (Great Western Reservoir); ^{241}Am, $^{239/240}$Pu, As, and Be for sediments and $^{233/234}$U, As, and Be for groundwater for both IHSS 201 (Standley Lake) and IHSS 202 (Mower Reservoir).

Response It does not appear that CDPHE followed the Conservative Screen process in selecting the additional PCOCs PCOCs are selected by a comparison of site-related concentrations to background concentrations Comments in Attachment 1 refer to comparison to the PRG for ^{235}U in sediments for IHSS 200 and historical releases of Cr

to IHSS 200 for groundwater It is DOE's position that the additional chemicals listed on Attachment 1 should not be included as PCOCs for the following reasons

- As, Be, and ^{241}Am in sediments for Great Western Reservoir (IHSS 200) - Weight-of-evidence evaluations indicate levels of these analytes in IHSS 200 are representative of background levels rather than contamination from the Site, detailed discussions for these analytes are provided in Overview of the Chemicals of Concern Identification Process (DOE, 1995) These conclusions have been agreed to by all parties in the dispute resolution process for TM 4 (see attached letter regarding dispute resolution agreement)

- ^{235}U in sediments for Great Western Reservoir (IHSS 200) - Weight-of-evidence evaluation indicates no spatial trends in activities, probability plots indicate one population for ^{235}U, and IHSS 200 mean (0 072 picocuries per gram [pCi/g]) and maximum (0 20 pCi/g) values for ^{235}U in stream sediments are similar to background mean (0 060 pCi/g) and maximum (0 19 pCi/g) values for stream sediments presented in the Background Geochemical Characterization Report (BGCR) (DOE, 1993) The mean value for ^{235}U in IHSS 200 reservoir sediments (0 071 pCI/g) is well below the benchmark reservoir value (11 4 pCi/g) (See TM 4, Appendix G (DOE, 1994) for a discussion of probability plots and CDPHE Letter Report for background and benchmark comparisons)

- As, Be, and $^{233/234}$U in groundwater for IHSS 200 - Weight-of-evidence evaluations indicate levels of these analytes in IHSS 200 are representative of naturally-occurring levels rather than contamination from the Site, detailed discussions for these analytes are provided in Overview of the Chemicals of Concern Identification Process (DOE, 1995) These conclusions have been agreed to by all parties in the dispute resolution process for TM 4 (see attached letter regarding dispute resolution agreement)

- Cr in groundwater for IHSS 200 - The three highest detections of chromium (20 4, 22 5, and 29 0 micrograms per liter [μg/L]) correspond to sampling rounds with elevated total suspended solids (TSS), indicating potential sampling error, the mean and maximum values for chromium in IHSS 200 groundwater (mean = 4 9 μg/L, maximum = 6 1 μg/L), excluding the sampling rounds with elevated TSS, are less than the mean and maximum background values for the upper hydrostratigraphic unit (UHSH) (mean = 7 01 μg/L, maximum = 31 65 μg/L) and the lower hydrostratigraphic unit (LHSU) (mean = 5 25 μg/L, maximum = 21 4 μg/L) reported in the BGCR (DOE, 1993) (See Section 7 6 1 of TM 4 (DOE, 1994) for a discussion on effects of elevated TSS on sampling results)

- Mn in groundwater for IHSS 200 - Weight-of-evidence evaluation for manganese in IHSS 200 groundwater indicates the maximum value (959 μg/L) in IHSS 200 is less than the maximum benchmark value (1,000 μg/L) In addition, the three highest detections of manganese (959, 700, and 463 μg/L) correspond to sampling rounds with elevated TSS indicating potential sampling error, the maximum value for manganese in IHSS 200 groundwater (369 μg/L), excluding the sampling rounds with elevated TSS, is less than the maximum background values for the UHSU (584 μg/L) and LHSU (710 μg/L) reported in the BGCR (DOE, 1993) (See Section 7 6 1 of TM 4 [DOE, 1994] for a discussion of manganese in IHSS 200 groundwater and a discussion of effects of elevated TSS on sampling results) Note The maximum value for Mn listed on Attachment 1 of the CDPHE comments (97,700 μg/L is incorrect, the maximum detected value for Mn in IHSS 200 groundwater is 959 μg/L

- ^{241}Am, As, and Be in sediments for Standley Lake (IHSS 201) and Mower Reservoir (IHSS 202)- Weight-of-evidence evaluations indicate levels of these analytes in IHSSs 201 and 202 are representative of naturally-occurring levels rather than contamination from the Site, detailed discussions for these analytes are provided in Overview of the Chemicals of Concern Identification Process (DOE, 1995) These conclusions have been agreed to by all parties in the dispute resolution process for TM 4 (see attached letter regarding dispute resolution agreement)

- $^{239/240}$Pu in sediments for IHSSs 201 and 202 - Weight-of-evidence evaluation indicates no spatial trends in activities for either reservoir, probability plots indicate one population for $^{239/240}$Pu in IHSSs 201 and 202, and the mean and maximum values for $^{239/240}$Pu in stream sediments in IHSS 201 (mean = 0 082 pCi/g, maximum = 0 47 pCi/g) and IHSS 202 (mean = 0 091 pCi/g, maximum = 0 17 pCi/g) are less than background stream sediment values presented in the BGCR (mean = 0 170 pCi/g, maximum = 2 36 pCi/g) (See TM 4, Appendix G [DOE, 1994] for a discussion of probability plots and CDPHE Letter Report for background comparisons)

- $^{233/234}$U, As, and Be in groundwater for IHSS 201 - Weight-of-evidence evaluations indicate levels of these analytes in IHSS 201 are representative of naturally-occurring levels rather than contamination from the Site, detailed discussions for these analytes are provided in Overview of the Chemicals of Concern Identification Process (DOE, 1995) These conclusions have been agreed to by all parties in the dispute resolution process for TM 4 (see attached letter regarding dispute resolution agreement) Note PCOCs were listed on Attachment 1 of the CDPHE comments for groundwater in IHSS 202 However, groundwater samples were not collected for Mower Reservoir (IHSS 202)

References

DOE, 1995 U S Department of Energy Overview of the Chemicals of Concern Identification Process, Rocky Flats Environmental Technology Site, Human Health Risk Assessment, Operable Unit 3 January 18, 1995 (Prepared for the dispute resolution process for TM 4)

DOE, 1994 Technical Memorandum No 4, Human Health Risk Assessment, Chemicals of Concern Identification, Operable Unit 3 Rocky Flats Environmental Technology Site September 23, 1994

DOE, 1993 Background Geochemical Characterization Report September 30, 1993

DOE, 1992 RFI/RI Final Work Plan for OU 3 Rocky Flats Plant Environmental Restoration Program (Manual 21100-WP-OU3 1, 2/28/92) Golden, Colorado February 28, 1992

Table 1
Comparison of Radionuclide Activities in Soil Data Sets (pCi/g)

Analyte	Trench Samples		Rock Creek Surface Soil Samples (Background)			OU 3 Surface Soil Samples		Jeffco Remedy Acres Surface Soil Samples	
	Max	Mean	UTL	Max	Mean	Max	Mean	Max	Mean
^{241}Am	0 27	0 03	0 064	0 04	0 02	0 52	0 035	0 363	0 143
$^{239/240}Pu$	1 59	0 12	0 133	0 10	0 05	2 95	0 158	6 468	1 01
$^{233/234}U$	2 02	1 01	1.86 1.40	1 47	1 15	2 14	1 01	NA	NA
^{235}U	0 36	0 05	0 199	0 14	0 05	0 124	0 049	NA	NA
^{238}U	2 15	0 99	2 00	1 52	1 19	2 13	1 04	NA	NA

Na = Not Analyzed
UTL = Upper Tolerance Limit

Table 2
Reasons for the Weight-of-Evidence Evaluation

Medium	Reason(s)	Discussion
Reservoir sediment (All IHSSs)	No comparable background data set	The Background Geochemical Characterization Report (BGCR) does not contain sediment data from background reservoirs, lakes, or ponds No other data sets from reservoirs along the front range were found with appreciable sample size Although other OUs used background seep data from the BGCR, there is no evidence to support that the seep data is comparable to the OU 3 reservoir data
Stream sediment IHSS 200 8 samples IHSS 201 14 samples IHSS 202 4 samples Stream surface water IHSS 200 4 total/1 dissolved IHSS 201 4 total/2 dissolved IHSS 202 0 Groundwater IHSS 200 1 well sampled 8 times, repeat samples IHSS 201 1 well sampled 8 times, repeat samples	1 Too few OU 3 samples 2 Disproportionate sample sizes Background Data from the BGCR Stream Sediments 20-60 Stream Surface Water 100 Groundwater 49 wells (157 samples)	Preliminary statistical evaluations using the approved approach indicated that 1 Satisfactory confidence and power in the inferential rigorous statistical tests was not possible because of the small sample sizes in confirmation sampling approach 2 Rigorous inferential statistical results could not be obtained with confidence owing to disproportionate sample sizes between the OU 3 and background data sets
Reservoir surface water	No comparable background data set	The Background Geochemical Characterization Report does not contain surface water data from background reservoirs, lakes, or ponds No other data sets from reservoirs along the front range were found with adequate sample size

CH2MHILL MEETING NOTES

PHC - - ( ) - - F -
NOTES ISSUED BY -- --- --- REGION ---
DATE

SUBJECT RFP EA STATUS

MEETING DATE. 2/14/94 LOCATION EG&G

ATTENDEES.
SEE ATTACHED LIST

NOTES BY KAREN WIEMELT/CH2M HILL REGION

TOPICS DISCUSSED	ACTION/NOTES

COC SELECTION

1. Topic - There is not a good background source for Reservoir SW and sediment

Action - EPA and CDH will talk to get Love/CDH and Milt Hamming/EPA and others to get resolution on what source to use by 7Fi 2/18/94

2. Topic - There is also a problem with the background source for cores. However, purpose of cores is nature & extent; there is probably not an exposure pathway for subsurface core.

Action - If core data is not assoc w/ an exposure pathway, the data does not need to be compared to bkgd data for risk assessment

Note: Same applies to soil trenches, esp since most contamination is at the surface. Trench info will be used for nature & extent. If any comparisons are done, use whole bkgd data.

17

REV 1/83 FORM 228
(cont reverse side)

TOPICS DISCUSSED | ACTION NOTES

3 Topic - GW data would be compared to UTLs since we're not seeing any hits. EPA/CDH did not require the wells as part of the work plan development. The wells were installed in case the public asked whether the gw had been investigated.

Action - Comparison to UTLs is acceptable for gw since it is not an exposure pathway. EG&G will look at data and confirm there's no problem.

4 Topic - Are these flowcharts the most recent?

Action - Will use ~~Fitz's~~ DOE's strawman + EPA comments

Len Pepe (left meeting 11:30)

GWR - EXPOSURE SCENARIOS

Topic - Will GWR be drained & left intact & partially drained?

Action - EG&G will look at current scenario and will also look at a most conservative approach (i.e. GWR drained) DOE is going to work with Broomfield to understand what they want to see done w/ GWR.

CH2MHILL MEETING NOTES

NOTES ISSUED BY _____ REGION

DATE _____

SUBJECT _____

MEETING DATE. _____ LOCATION _____

ATTENDEES

NOTES BY _____ REGION

TOPICS DISCUSSED	ACTION/NOTES

DRINKING H_2O SUPPLY

1 Topic - We had some conversations at previous wkg on what data set do we for drinking water source - untreated or treated.

Action - Since it is an existing water supply, for drinking water scenario, we will use treated water. For recreational we'll use untreated water.

2. Topic - What about for agricultural use?

Action - If addressed qualitatively, thorough explanation must be provided

3 Topic - Drinking water scenario will be used for which Reservoirs?

Action - Studley and GWR Irrigation will be used for Mower.

TOPICS DISCUSSED	ACTION/NOTES

PU RESULTS

Topic - Presented Pu results for soil and sed - see maps. No action

TM NO. 1

1. Topic - Typed responses to TM No. 1 to EPA previously.

EPA concern on Comment 1A was, if we didn't get enough samples in a given drainage, do we have enough data?

Action - It depends on data aggregation.

2. Topic - Was nearshore sediment sampling conducted during high or low water levels?

Action - GWR was sampled during low water levels. Standley was sampled right after when water was beginning to rise. E&E stopped and sampled later in the summer when water level was down. The response is incorrect and will be revised.

3. Topic - Seasonality typically affects EE; however, at OU 3, the systems are impacted primarily by management practices. Further Woman Creek is diverted from GWR most of the time.

Action - EPA and CDH will defer commenting until EE mtg (2/25)

CH2MHILL MEETING NOTES

PROJECT NUMBER — SHEET 5 OF 5
NOTES ISSUED BY — REGION
DATE

SUBJECT

MEETING DATE. LOCATION

ATTENDEES.

NOTES BY REGION

TOPICS DISCUSSED	ACTION/NOTES

3. - Action - cont

- DOE will formally submit to EPA/CDH EPA/CDH will send final approval letter. EG&G will attach to TM No. 1 for document control.

EPA

CDH Dave Norbury

DOE For Jim Pape

EG&G

Meeting Agenda
February 14, 1994
Operable Unit 3

1) COC Selection Process

- Background comparison

  - IHSS by IHSS
  - Media background comparisons

- Risk Assessment COC flow chart

2) Pu - surficial soils, sediments, surface water

- GIS plots

  - Mean + 2sd
  - >10-6 risk

3) Exposure scenario definition for water intake

- Water treatment plant?

4) Exposure scenario definition for Great Western Reservoir

- Is the cup half empty or half full?

5) Technical Memorandum Number 1

- Comment resolution

22

ATTACHMENT 1 OF THE CDPHE COMMENTS ON THE CDPHE LETTER REPORT FOR OU 3

Attachment 1

Source Area	Media	PCOC	Comment**
Soils* (IHSS 195)	surface and subsurface soils	$Pu^{239/240}$ Am^{241}	
Great Western Reservoir (IHSS 200)	sediments	$Pu^{239/240}$ Am^{241} U^{238} As Be	PRG = .17 pCi/gm; max.conc. = .56 pCi/gm
	ground water	$U^{233/234}$ As Be Cr Mn	historical release of Cr to GWR. BGCR Statsic = 126ug/l for Mn; GWR max = 97700 ug/l.
Standley Lake (IHSS 202)	sediments	$Pu^{239/240}$ Am^{241} As Be	
	ground water	$U^{233/234}$ As Be	
Mower Res. (IHSS 202)	sediments	$Pu^{239/240}$ Am^{241} As Be	
	ground water	$U^{233/234}$ As Be	

* Depending on the data analysis, these may be split in to multiple source areas. DOE has already correctly proposed breaking the surface soil into several source areas for which ratio sums have been calculated, but not including the uranium isotopes.

** All these constituents without comments have been designated COCs by EPA in a separate correspondence. Therefore, by definition these constituents would also be PCOCs.

BGCR - Background Geochemical Characterization Report

GWR - Great Western Reservoir

DISPUTE RESOLUTION
AGREEMENT BY THE IAG PROJECT COORDINATORS
OPERABLE UNIT No 3 CONTAMINANTS OF CONCERN TECHNICAL
MEMORANDUM #4
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
FEBRUARY 10, 1995

The Operable Unit No. 3 Contaminants of Concern Technical memorandum #4 transmitted to EPA and CDPHE on September 30, 1995 was disapproved in a letter dated January 5, 1995.

At issue in the disapproval decision was the list of contaminants of concern proposed for inclusion in the baseline risk assessment. EPA and CDPHE proposed an expanded list of COC's that included several that DOE considered at background concentrations and would therefore not be included on the COC list. EPA and CDPHE believed DOE inappropriately eliminated chemicals from further consideration in the baseline risk assessment.

DOE disputed this decision in a letter dated January 19, 1995.

The parties met on February 3, 1995 to resolve this dispute and agreed to jointly extend the dispute period to February 10, 1995.

DOE presented to EPA and CDPHE additional new information on probability plots, background soils and onsite OU's. This new information supported the now agreed understanding that these additional chemicals are at background levels. This additional information was presented in a meeting on February 8, 1995

The Parties agree to the following in resolution of this dispute:

- EPA and CDPHE agree to approve TM#4 based on the additional information presented at the meeting of February 8th. Additionally, the three Parties agree to work together in presenting this information in the RFI/RI Report.

- DOE agrees to quantitatively calculate the Human Health Risk from the background chemicals arsenic (As) and beryllium (Be) found in OU 3 sediments in the RFI/RI Report. The results of this assessment will be presented in the risk characterization section of the report.

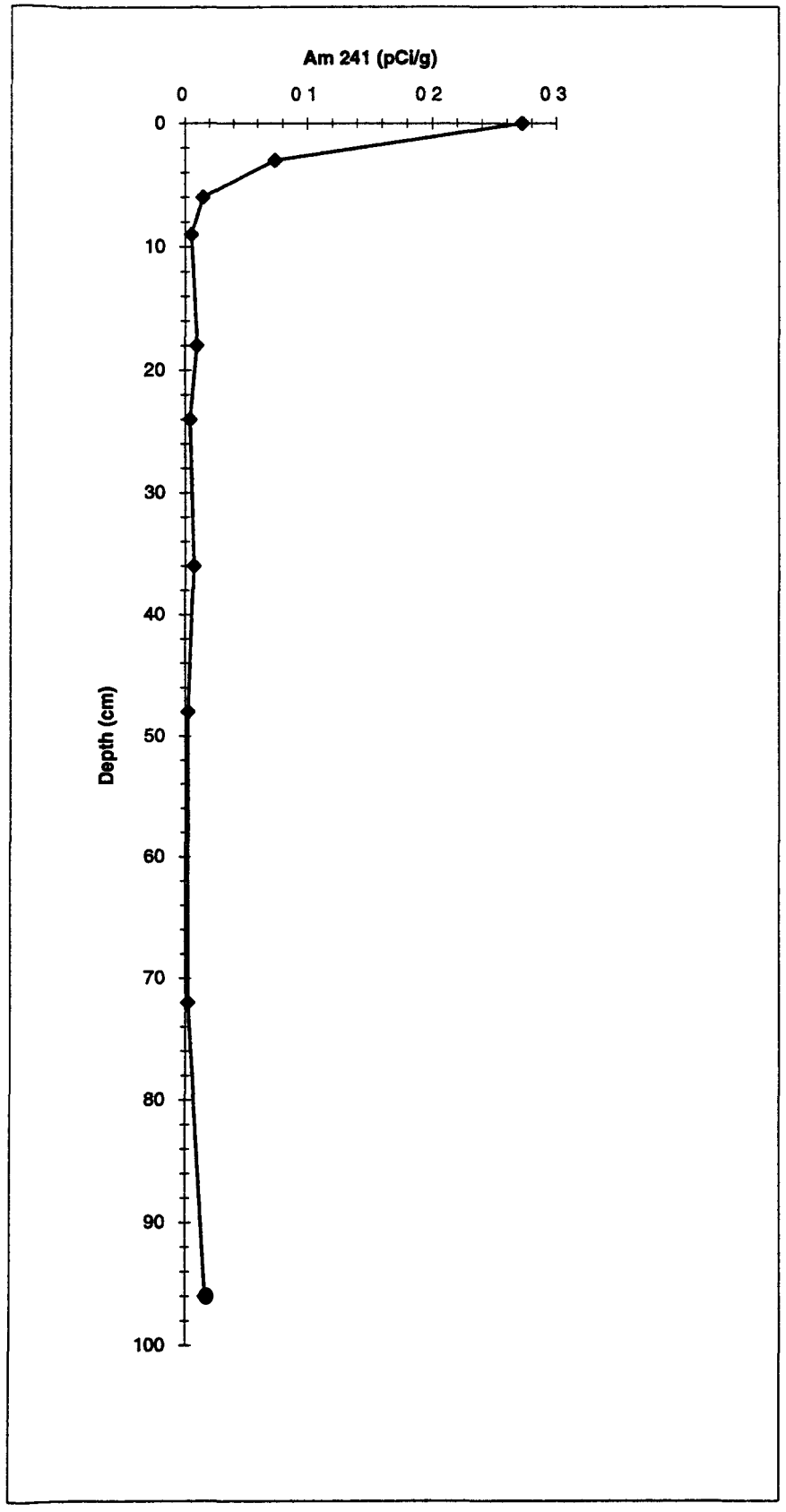
- DOE, EPA and CDPHE continue to agree that the groundwater pathway investigated in the OU 3 Project is not a complete pathway. The groundwater wells below Standley Lake and Great Western Reservoir were placed to confirm the lack of movement of radionuclides COC's from the reservoirs to the groundwater.

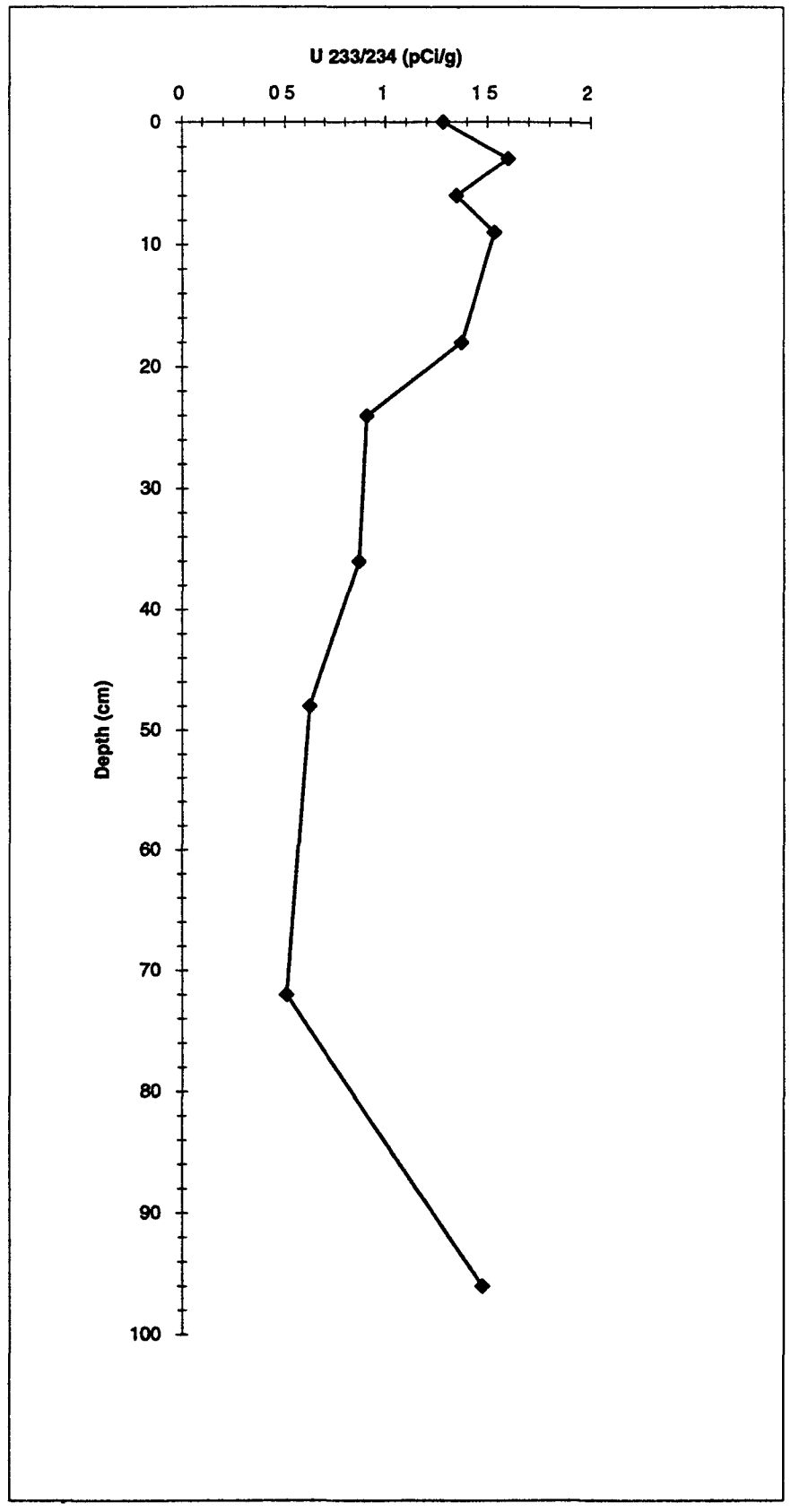
- The Parties recognize the schedule for the draft RI Report will need to be revised.

Steve Slaten 2-13-95 Martin Hestmark 2/13/95 Joe Schieffelin 2/17/95

26/26

Figure 1a TRENCH 02792





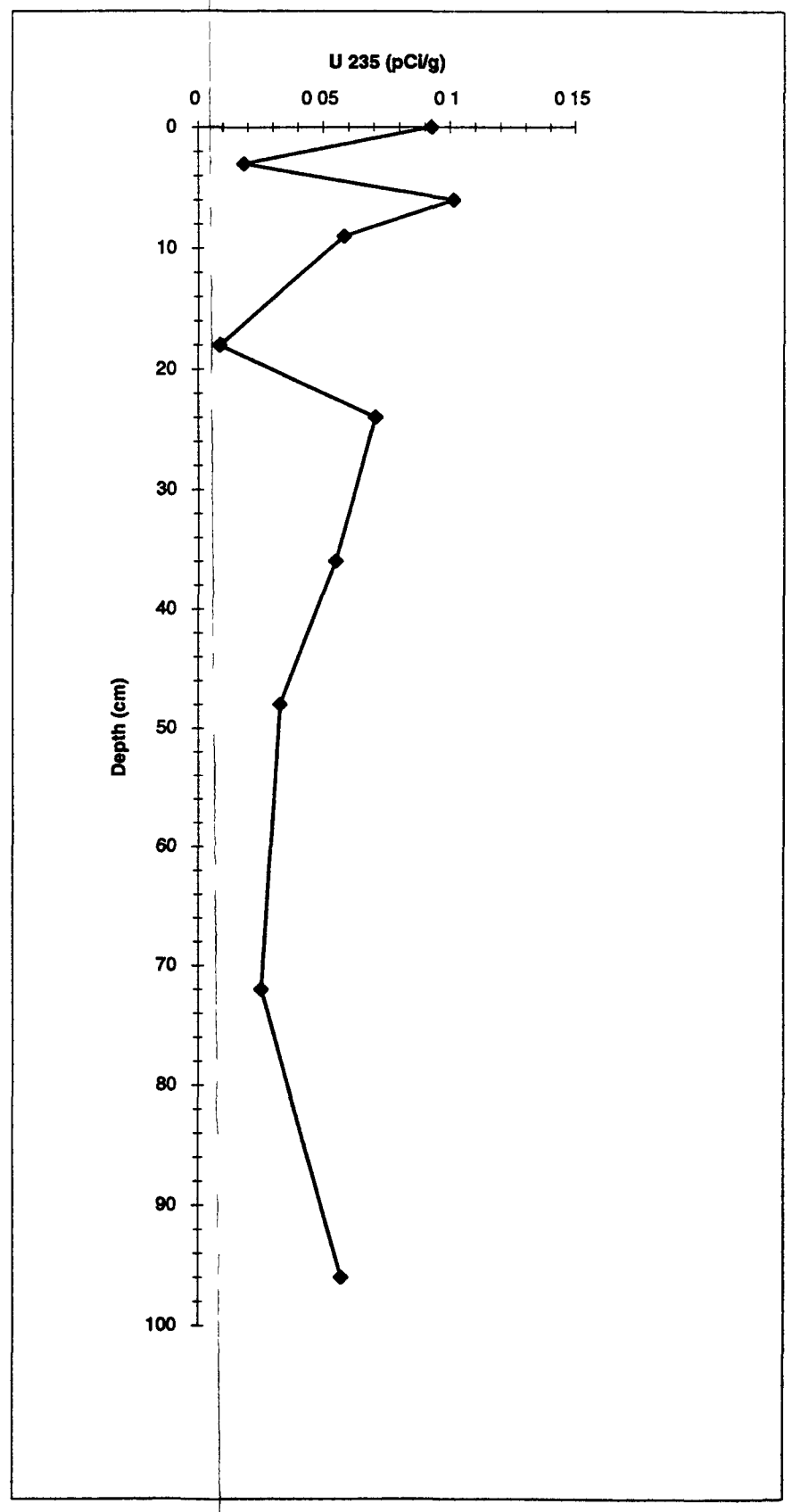
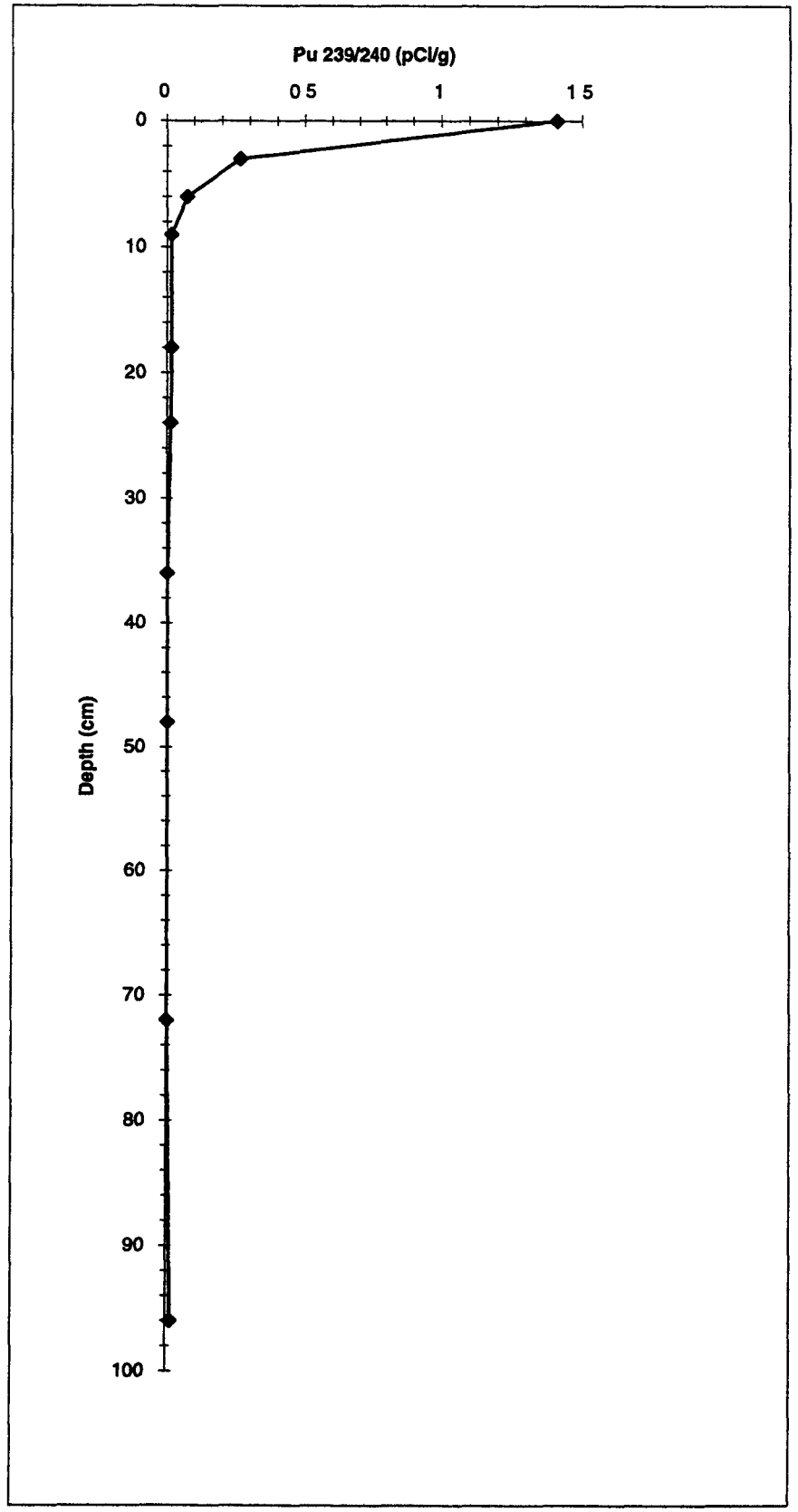


Figure 1b TRENCH 02792



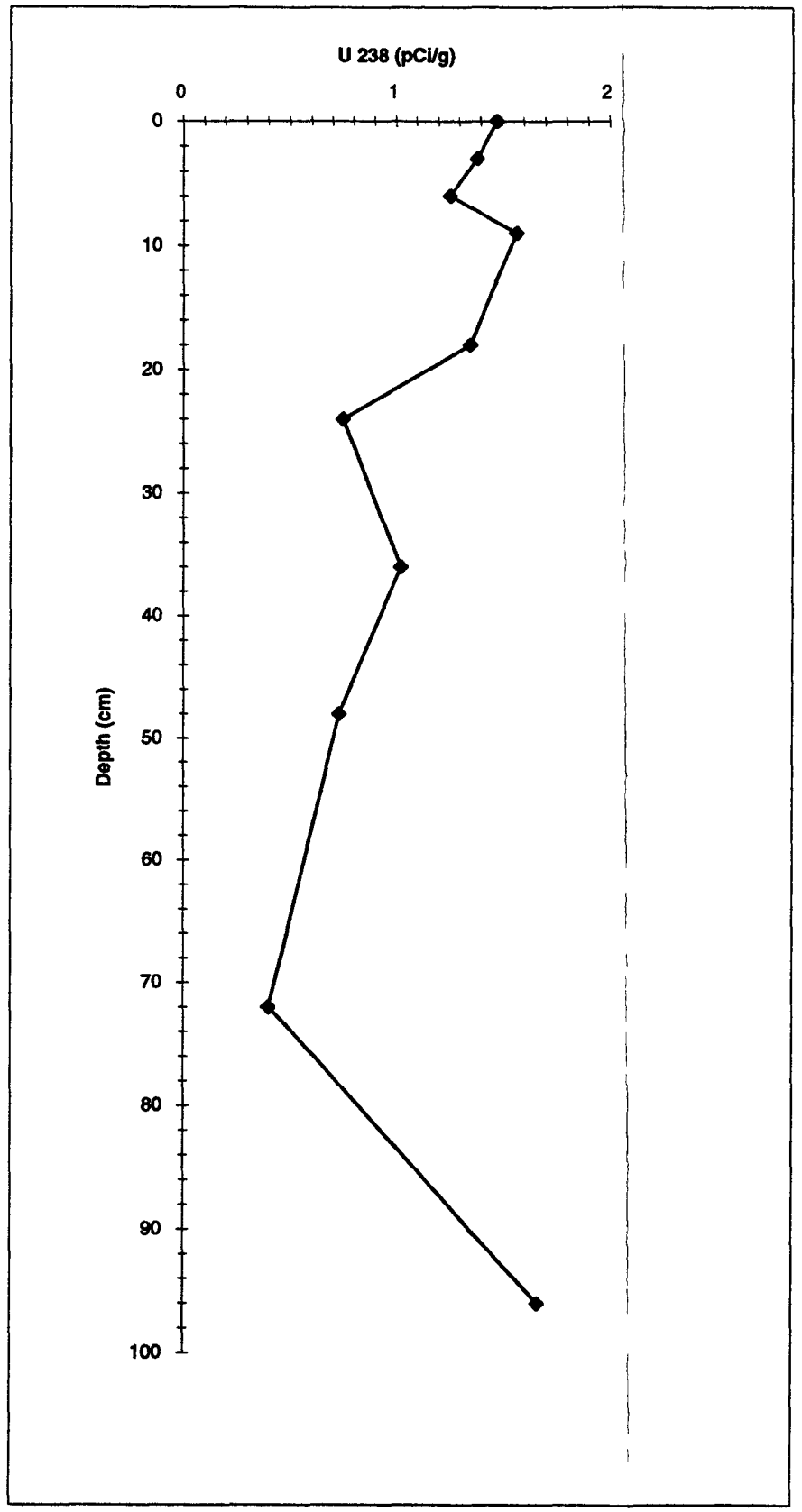
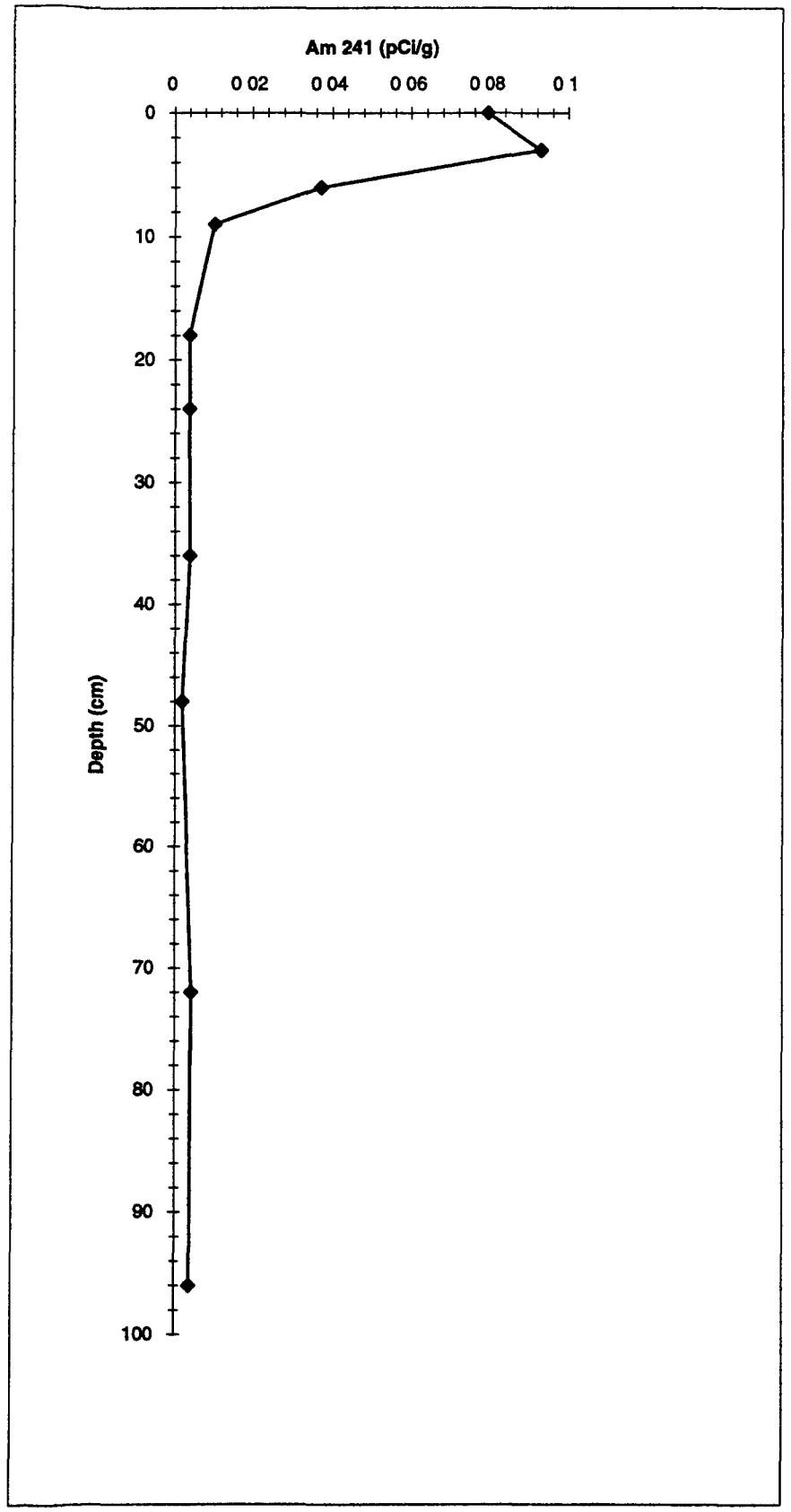
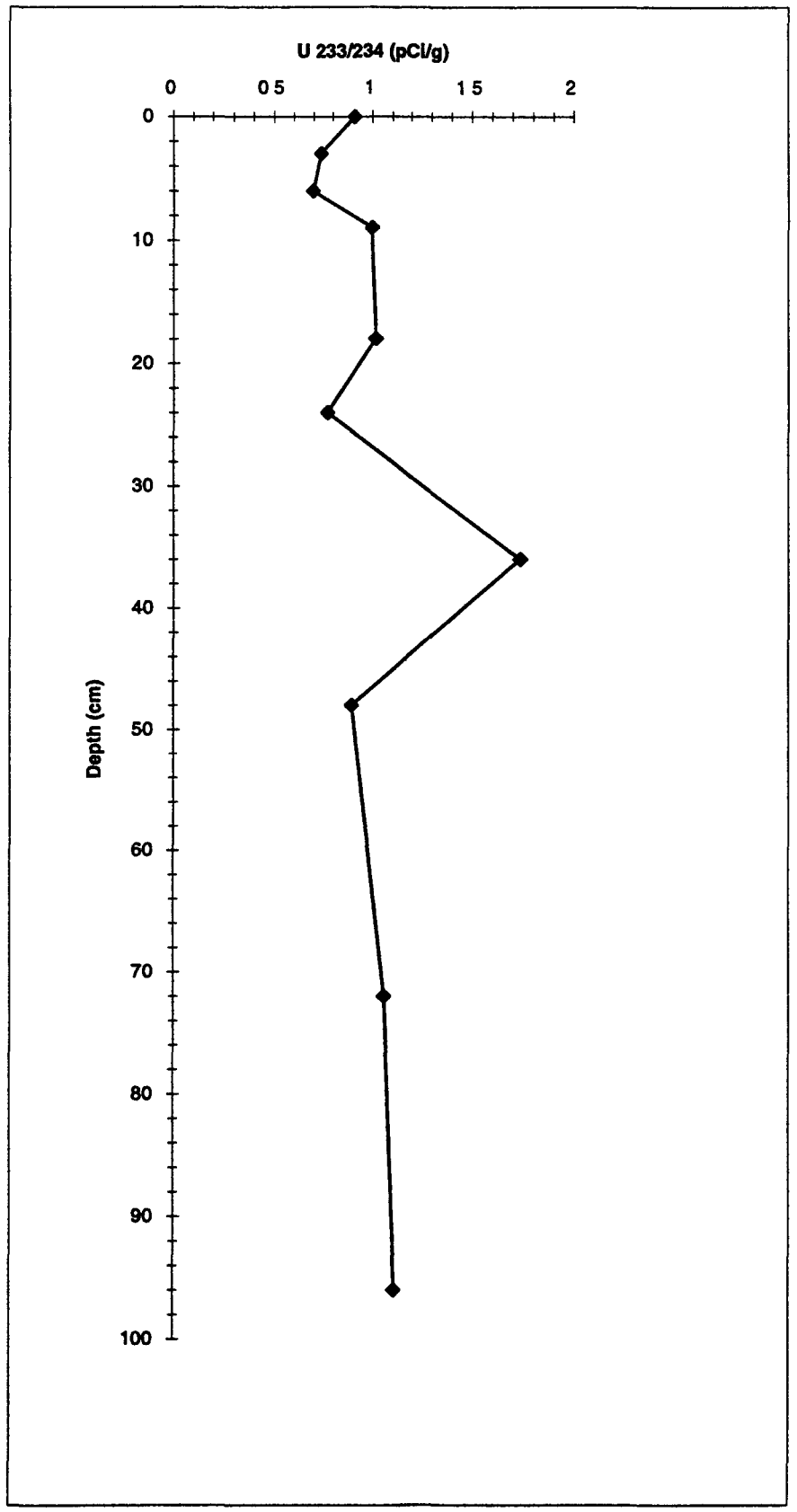


Figure 2a TRENCH 03092





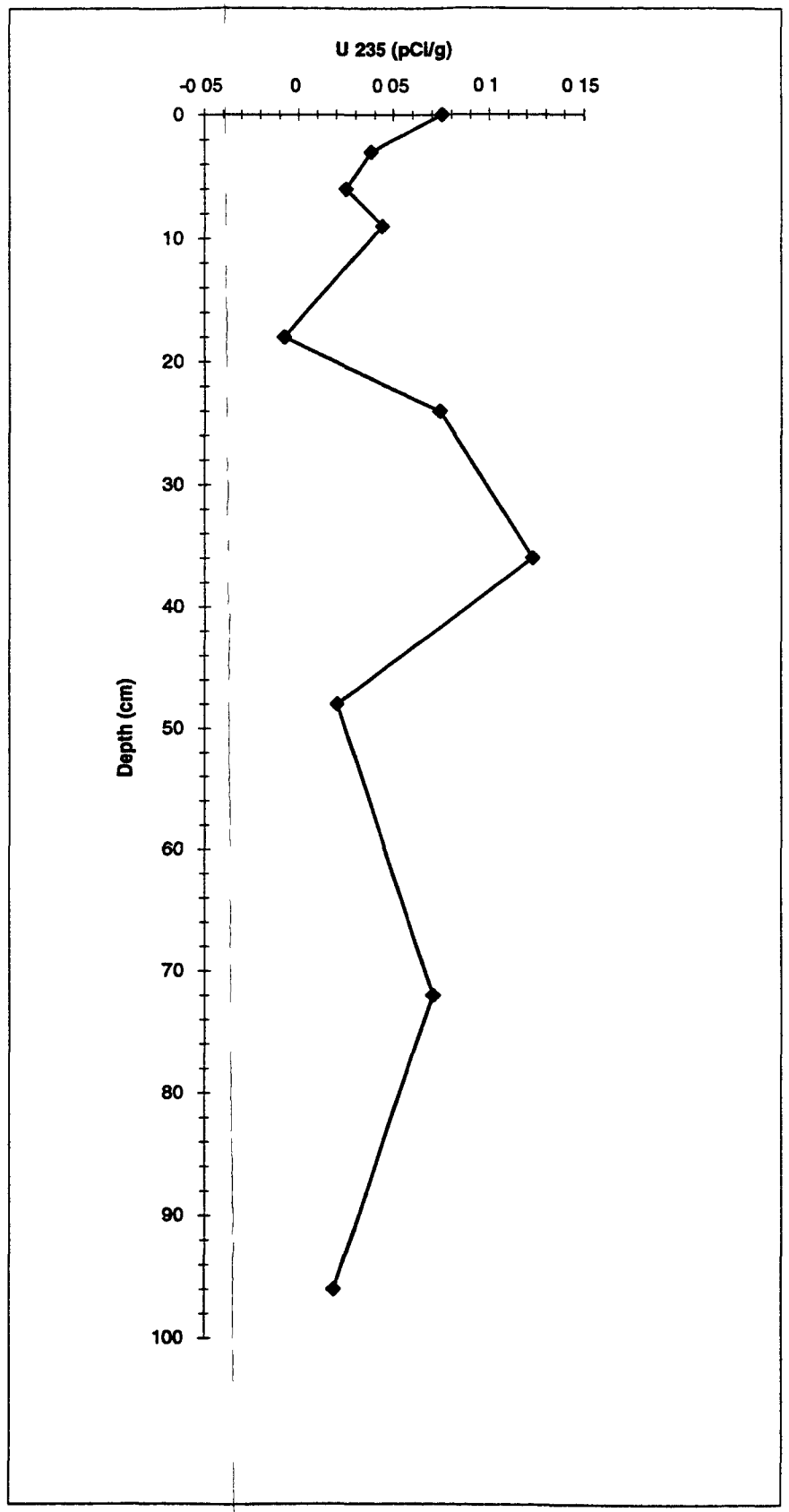
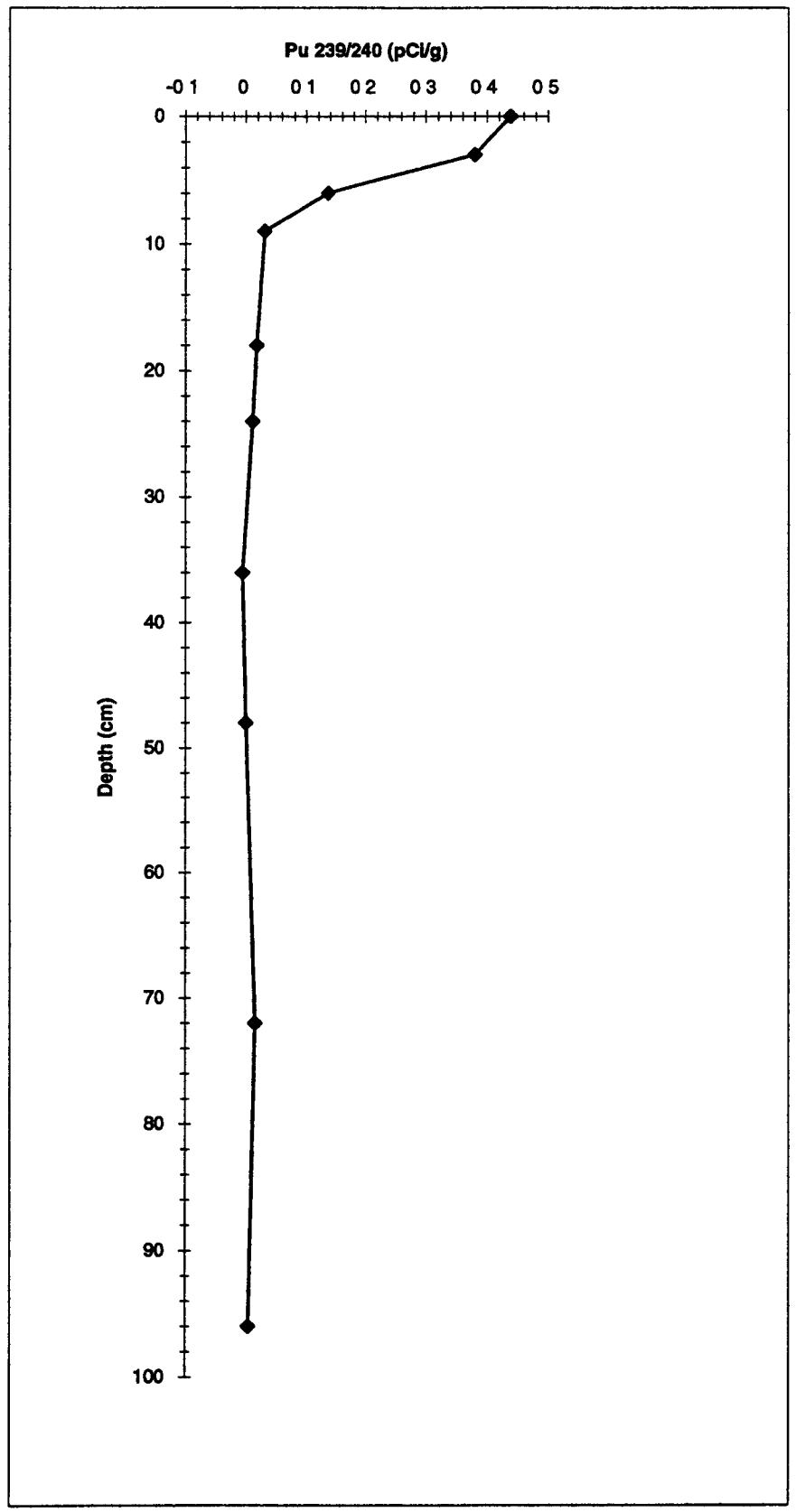


Figure 2b TRENCH 03092



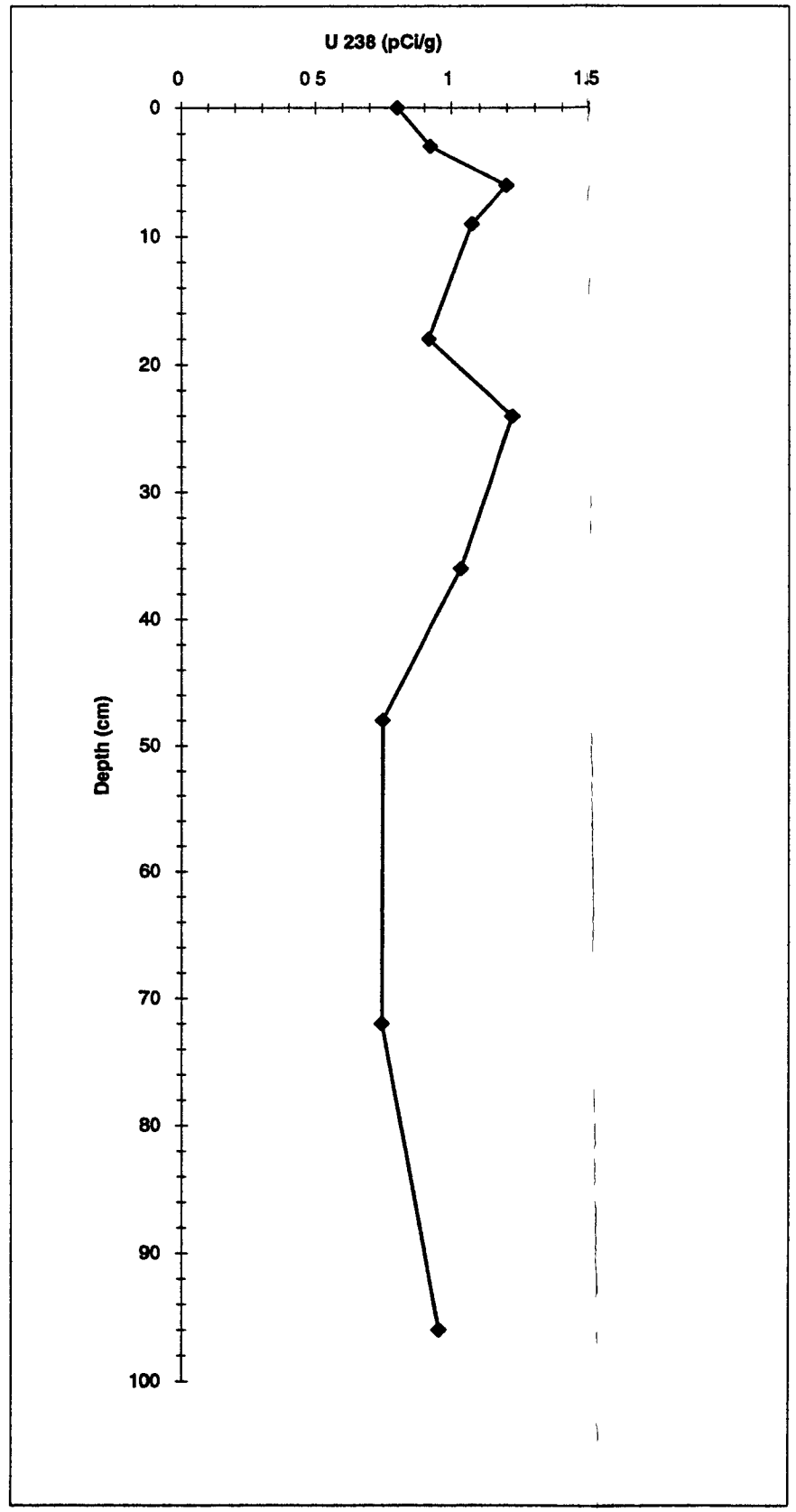
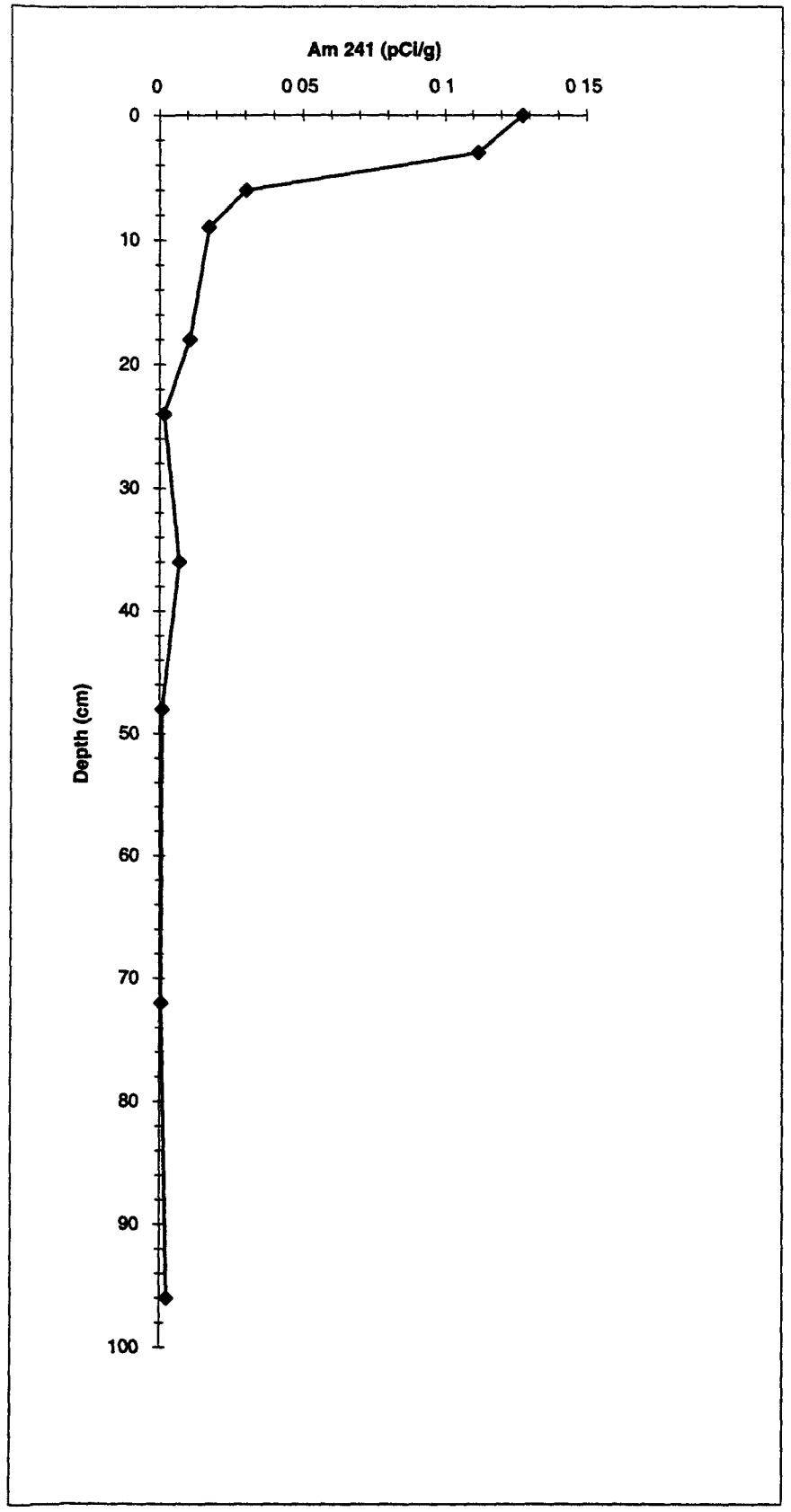
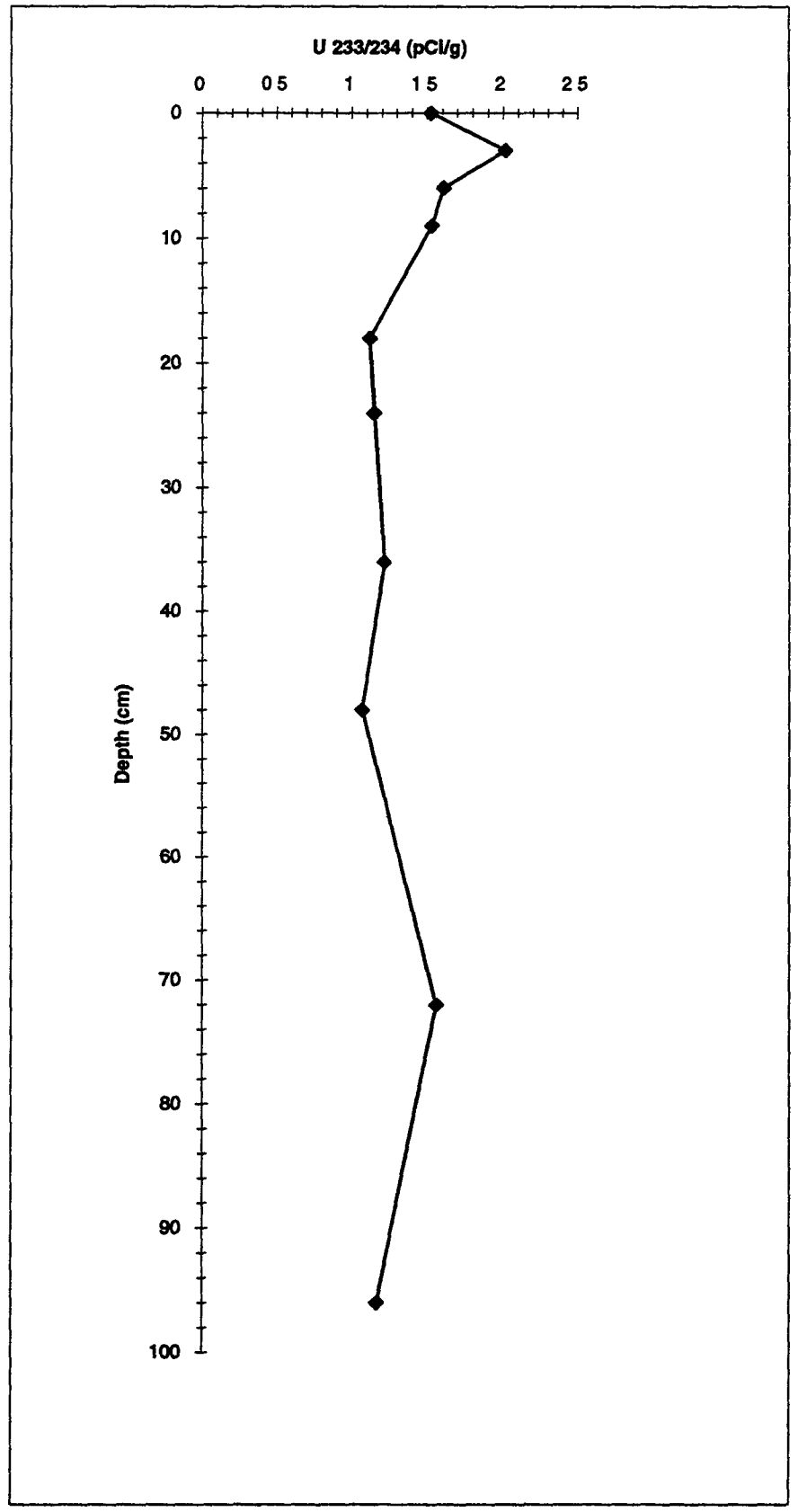


Figure 3a TRENCH 03692





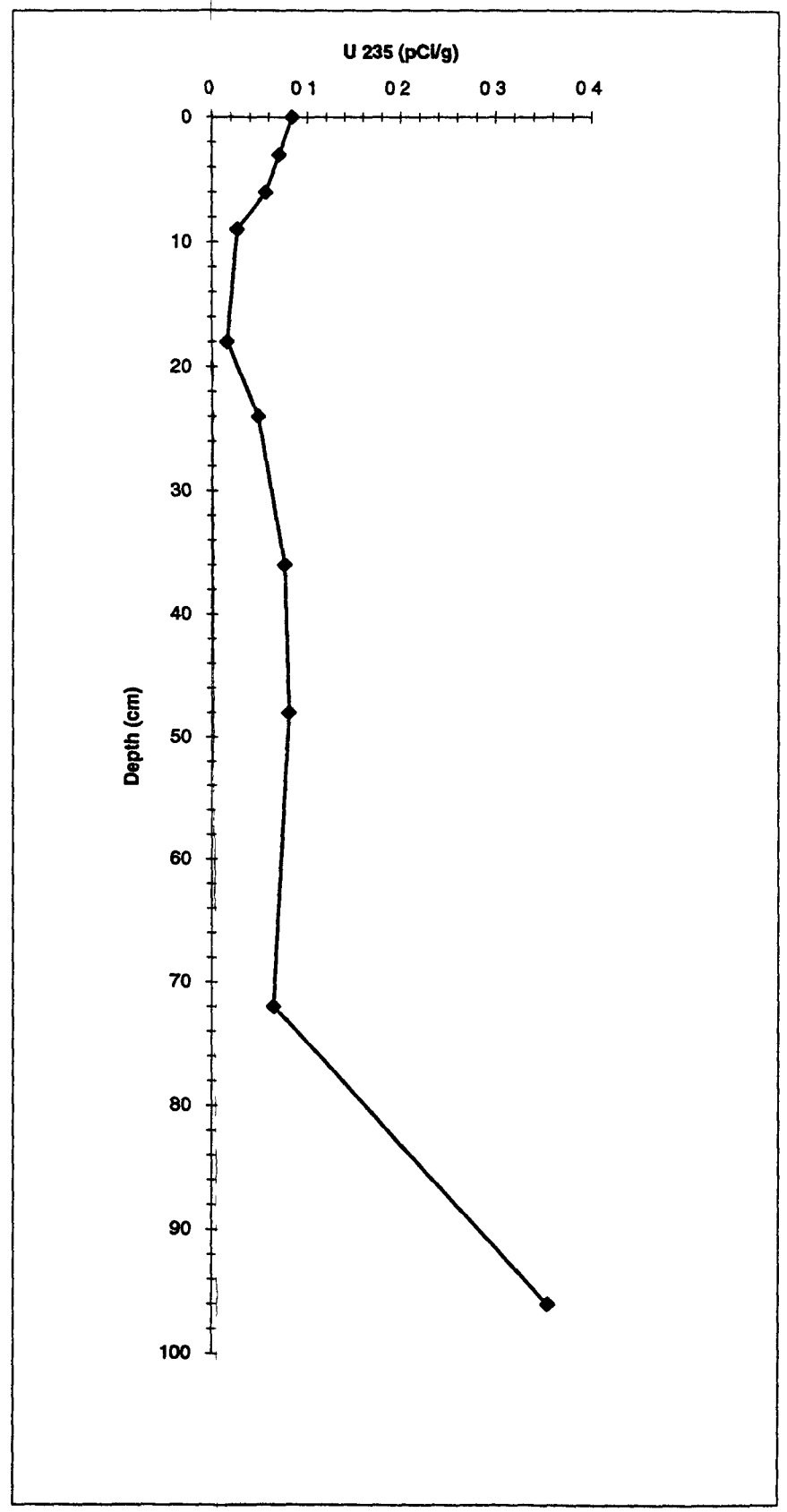


Figure 3b TRENCH 03692